CLAIM AMENDMENTS

Applicants propose amending the claims as follows:

1. (canceled)

2. (previously presented) A method for processing an end portion of an optical fiber element having a center core in the axial center thereof, a cylindrical clad surrounding said core and an outer cover coating film surrounding said clad, comprising the steps of:

removing said coating film in a partial cylindrical portion thereof having a specified length so as to form a coating film-removed section and a residual coating film section at one end portion of said optical fiber element;

dipping a first part of said coating film-removed section and whole part of said residual coating film section disposed at said one end portion of said optical fiber element into an etchant capable of etching materials of said core and clad of said fiber element perpendicularly to level surface of said etchant in such a manner that a remaining second part of said coating film-removed section is extending upwardly from the level surface of said etchant to thereby initiate etching process;

causing such a portion of the clad as exposed at the first part of the coating film-removed section of said fiber element and immersed in said etchant to be etched into a coaxial reduced-diameter portion while causing such a portion of the clad as exposed at the second part of the coating film-removed section and attached thereto with said etchant which rises to a certain height above said level surface due to surface tension of the etchant to be etched into a conical tapered surface portion which is formed between the reduced-diameter portion and un-etched portion of said fiber element;

terminating the etching once said reduced-diameter portion reaches a certain diameter that is close to but larger than the diameter of the center core;and

cutting said reduced-diameter portion at a point spaced by a distance which does not exceed the diameter of the reduced-diameter portion from the boundary between said tapered surface portion and said reduced-diameter portion toward the reduced-diameter portion so as to leave a reduced-diameter end portion continuously joining said tapered surface portion.

3. (original) The method according to claim 2, which further comprises a step of providing, before the dipping step, a level controlling means for restraining the level surface of said etchant to said optical fiber element at a position where said optical fiber element contacts the level surface of said etchant whereby the axial dimension of said tapered surface portion to be formed on said optical fiber element is set at a predetermined value.

4. (canceled)

5. (original) The method according to claim 3 wherein, said level controlling means is constituted by a coating film applied to said optical fiber element.

6. (canceled)

7. (previously presented) A method for processing an end portion of an optical fiber element having a center core and an outer clad surrounding said core, comprising the steps of:

providing a level controlling means for restraining the level surface of said etchant to said optical fiber element at a position where said optical fiber element contacts the level surface of said etchant;

dipping one end portion of said optical fiber element into an etchant capable of etching the fiber element perpendicularly to level surface of said etchant so that said level controlling means contacts at one end thereof to the level surface of said etchant;

causing the outer clad of said one end portion of said fiber element immersed in said etchant to be etched into a substantially coaxial reduced-diameter portion while causing the outer clad of such a portion of said fiber element that is extended upwardly to a certain height from the level controlling means and that is attached with the etchant which rises upwardly from the level controlling means due to surface tension of the etchant to be etched into a conical tapered surface portion which is formed between the reduced-diameter portion and un-etched portion of said fiber element whereby the axial dimension of said tapered surface portion to be formed on said optical fiber element is set at a predetermined value;

terminating the etching once said reduced-diameter portion reaches a certain diameter that is close to but larger than the diameter of the center core; and

cutting said reduced-diameter portion at a point spaced by a distance which does not exceed the diameter of the reduced-diameter portion from the boundary between said tapered surface portion and said reduced-diameter portion toward the reduced-diameter portion so as to leave a reduced-diameter end portion continuously joining said tapered surface portion.

8. (canceled)

9. (original) The method according to claim 7 wherein, said level controlling means is constituted by a coating film applied to said optical fiber element.

10-17. (canceled)

18. (original) The method according to claim 2, wherein a liquid having a specific gravity lower than that of said etchant is mixed into said etchant.

19. (original) The method according to claim 18, wherein a plurality of said optical fiber elements held in parallel to each other by a single common covering member to thereby form an optical fiber array, are subjected to processing.

20. (original) The method according to claim 2, wherein a plurality of said optical fiber elements held in parallel to each other by a single common covering member to thereby form an optical fiber array, are subjected to processing.

21. (original) The method according to claim 3, wherein a liquid having a specific gravity lower than that of said etchant is mixed into said etchant.

22. (original) The method according to claim 21, wherein a plurality of said optical fiber elements held in parallel to each other by a single common covering member to thereby form an optical fiber array, are subjected to processing.

23. (original) The method according to claim 3, wherein a plurality of said optical fiber elements held in parallel to each other by a single common covering member to thereby form an optical fiber array, are subjected to processing.

24-26. (canceled)

27. (original) The method according to claim 5, wherein a liquid having a specific gravity lower than that of said etchant is mixed into said etchant.

28. (original) The method according to claim 27, wherein a plurality of said optical fiber elements held in parallel to each other by a single common covering member to thereby form an optical fiber array, are subjected to processing.

29. (original) The method according to claim 5, wherein a plurality of said optical fiber elements held in parallel to each other by a single common covering member to thereby form an optical fiber array, are subjected to processing.

30-32. (canceled).

33. (original) The method according to claim 7, wherein a liquid having a specific gravity lower than that of said etchant is mixed into said etchant.

34. (original) The method according to claim 33, wherein a plurality of said optical fiber elements held in parallel to each other by a single common covering member to thereby form an optical fiber array, are subjected to processing.

35. (original) The method according to claim 7, wherein a plurality of said optical fiber elements held in parallel to each other by a single common covering member to thereby form an optical fiber array, are subjected to processing.

36-38. (canceled)

39. (original) The method according to claim 9, wherein a liquid having a specific gravity lower than that of said etchant is mixed into said etchant.

40. (original) The method according to claim 39, wherein a plurality of said optical fiber elements held in parallel to each other by a single common covering member to thereby form an optical fiber array, are subjected to processing.

41. (original) The method according to claim 9, wherein a plurality of said optical fiber elements held in parallel to each other by a single common covering member to thereby form an optical fiber array, are subjected to processing.

42-44. (canceled)

45. (currently amended) The method according to claim 2, wherein said distance is one of :

(1) 20-30-mm μm,

(2) 40-60 % of the diameter of the core or

(3) 16-24 % of the diameter of the optical fiber element.